

IN THE CLAIMS:

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Please cancel claims 2, 13, 35, 39, and 45 without prejudice, amend claims 1, 3, 6-12, 14-20, 23-29, 31-34, 36, 37, 40-44, 46-52, 55-59, 61, and 63-65, and add new claims 66 and 67, such that now pending claims 1, 3-12, 14-34, 36-38, 40-44, and 46-67 read as follows:

SUB  
B1  
C1  
1. (Amended) A method comprising:  
singulating at least one semiconductor wafer into a plurality of singulated dice, each said die comprising an integrated circuit;  
applying an identification code to a carrier, said identification code uniquely identifying each of a plurality of said singulated dice;  
depositing said plurality of said singulated dice unpackaged into said carrier; and  
testing said singulated dice while deposited in said carrier.

SUB  
B2  
A2  
3. (Amended) A method as in claim 1 wherein said identification code comprises information identifying said at least one semiconductor wafer.

4. A method as in claim 3 wherein said identification code comprises at least one of a bar code or a code stored in a memory device on said carrier.

5. A method as in claim 4 wherein said memory device comprises one of a magnetic media or a semiconductor memory device.

A3  
cont.  
6. (Amended) A method as in claim 1 further comprising applying a die identification code to each of said singulated dice, each said die identification code comprising information relating to said die to which said die identification code is applied.

7. (Amended) A method as in claim 6 wherein each said die identification code comprises information identifying the semiconductor wafer from which said die was singulated.

8. (Amended) A method as in claim 7 wherein each said die identification code is applied to said die after said dice are deposited into and secured in said carrier.

9. (Amended) A method as in claim 7 wherein each said die identification code further comprises information identifying a particular wafer processing lot in which the semiconductor wafer from which said die was singulated was created.

10. (Amended) A method as in claim 8 wherein said die identification code is applied to said die through an opening in said carrier.

11. (Amended) A method as in claim 1 wherein said testing comprises a burn-in testing.

12. (Amended) A method as in claim 1 wherein said carrier secures said dice during use of said dice after said testing and said carrier acts as a final package for said dice.

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14. (Amended) A method as in claim 1 further comprising mounting a plurality of elongate, resilient electrical contact elements on contact pads of said dice.

15. (Amended) A method as in claim 14 wherein said plurality of elongate, resilient electrical contact elements are mounted prior to depositing said dice into said carrier.

16. (Amended) A method as in claim 1 further comprising applying a top on said carrier after depositing said dice into said carrier.

17. (Amended) A method as in claim 14 further comprising mounting said carrier onto a substrate having a plurality of electrical contact pads.

18. (Amended) A method as in claim 17 wherein said carrier is mounted on said substrate prior to depositing said dice onto said carrier.

19. (Amended) A method as in claim 17 wherein said carrier is mounted on said substrate after depositing said dice onto said carrier.

20. (Amended) A method as in claim 17 wherein each of said contact pads on said dice are electrically coupled to a corresponding one of said plurality of electrical contact pads on said substrate through a corresponding one of said elongate, resilient electrical contact elements.

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21. A method as in claim 20 wherein each of said elongate, resilient electrical contact elements is freestanding.

22. A method as in claim 14 wherein each of said elongate, resilient electrical contact elements is freestanding.

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23. (Amended) A method as in claim 17 wherein said substrate is a test printed circuit board which is used in said testing.

24. (Amended) A method as in claim 17 wherein said substrate is a final package unit for said dice.

25. (Amended) A method as in claim 17 wherein said substrate is used in said testing, and if said dice pass said testing, said substrate is used to package said dice for use.

26. (Amended) A method as in claim 25 wherein if said dice fail said testing, said dice are removed from said carrier and other dice are deposited into said carrier.

27. (Amended) A method as in claim 1 wherein said identification code comprises information identifying said at least one semiconductor wafer and wherein said method further comprises:  
characterizing said dice based on said testing;  
reading said identification code.

28. (Amended) A method as in claim 1 wherein said reading occurs after said characterizing.

Sub 3  
29. (Amended) A method as in claim 27 further comprising:

mounting, prior to said testing, a plurality of elongate, resilient electrical contact elements on contact pads of said dice;

mounting, prior to said testing, said carrier onto a substrate having a plurality of electrical contact pads, wherein each of said contact pads on said dice are electrically coupled to a corresponding one of said plurality of electrical contact pads on said substrate through a corresponding one of said elongate, resilient electrical contact elements.

30. A method as in claim 29 wherein each of said elongate, resilient electrical contact elements is freestanding.

31. (Amended) A method as in claim 29 wherein each of said elongate, resilient electrical contact elements is compressed less during said testing than during final use of said dice.

32. (Amended) A method as in claim 20 wherein each of said elongate, resilient electrical contact elements is compressed less during said testing than during final use of said dice.

33. (Amended) A method as in claim 20 further comprising removing said dice from said carrier after said testing and packaging said dice for use.

34. (Amended) A method comprising:

singulating at least one semiconductor wafer into a plurality of singulated dice, each said die comprising an integrated circuit;

applying an identification code to each of said dice, each said identification code uniquely identifying the die to which said identification code is applied;

depositing a plurality of said singulated dice unpackaged into said carrier; and

testing said singulated dice while deposited in said carrier.

36. (Amended) A method as in claim 34 wherein each said identification code comprises information identifying the semiconductor wafer from which said die was singulated.

37. (Amended) A method as in claim 34 wherein each said identification code comprises at least one of a bar code or a code stored in a memory device on said carrier.

38. A method as in claim 37 wherein said memory device comprises a magnetic media.

40. (Amended) A method as in claim 34 wherein each said identification code is applied to said dice after said dice are deposited into and secured in said carrier.

41. (Amended) A method as in claim 34 wherein each said identification code comprises information identifying a particular wafer processing lot in which the wafer from which said die was singulated was created.

42. (Amended) A method as in claim 42 wherein each said identification code is applied to said dice through an opening in said carrier.

43. (Amended) A method as in claim 34 wherein said testing comprises a burn-in testing.

44. (Amended) A method as in claim 34 wherein said carrier secures said dice during use of said dice after said testing and said carrier acts as a final package for said dice.

46. (Amended) A method as in claim 34 further comprising mounting a plurality of elongate, resilient electrical contact elements on contact pads of said dice.

47. (Amended) A method as in claim 46 wherein said plurality of elongate, resilient electrical contact elements are mounted prior to depositing said dice into said carrier.

48. (Amended) A method as in claim 34 further comprising applying a top on said carrier after depositing said dice into said carrier.

49. (Amended) A method as in claim 46 further comprising mounting said carrier onto a substrate having a plurality of electrical contact pads.

50. (Amended) A method as in claim 49 wherein said carrier is mounted on said substrate prior to depositing said dice onto said carrier.

51. (Amended) A method as in claim 49 wherein said carrier is mounted on said substrate after depositing said dice onto said carrier.

52. (Amended) A method as in claim 49 wherein each of said contact pads on said dice are electrically coupled to a corresponding one of said plurality of electrical contact pads on said substrate through a corresponding one of said elongate, resilient electrical contact elements.

53. A method as in claim 52 wherein each of said elongate, resilient electrical contact elements is freestanding.

54. A method as in claim 46 wherein each of said elongate, resilient electrical contact elements is freestanding.

55. (Amended) A method as in claim 49 wherein said substrate is a test printed circuit board which is used in said testing.

56. (Amended) A method as in claim 49 wherein said substrate is a final package unit for said dice.

57. (Amended) A method as in claim 49 wherein said substrate is used in said testing, and if said dice pass said testing, said substrate is used to package said dice for use.

58. (Amended) A method as in claim 57 wherein if said dice fail said testing, said dice are removed from said carrier and other dice are deposited into said carrier.

Q10  
B10  
59. (Amended) A method as in claim 34 wherein said identification code comprises information identifying at least a specific processing lot of wafers in which the wafer from which said die was singulated was created, and wherein said method further comprises:

characterizing said dice based on said testing;  
reading said identification code.

60. A method as in claim 59 wherein said reading occurs after said characterizing and wherein said reading identifies said specific processing lot.

Q11  
61. (Amended) A method as in claim 34 further comprising:

mounting, prior to said testing, a plurality of elongate, resilient electrical contact elements on contact pads of said dice; B

mounting, prior to said testing, said carrier onto a substrate having a plurality of electrical contact pads, wherein each of said contact pads on said dice are electrically coupled to a corresponding one of said plurality of electrical contact pads on said substrate through a corresponding one of said elongate, resilient electrical contact elements.

62. A method as in claim 61 wherein each of said elongate, resilient electrical contact elements is freestanding.

Q12  
63. (Amended) A method as in claim 61 wherein each of said elongate, resilient electrical contact elements is compressed less during said testing than during final use of said dice.

B  
64. (Amended) A method as in claim 52 wherein each of said elongate, resilient electrical contact elements is compressed less during said testing than during final use of said dice.

65. (Amended) A method as in claim 52 further comprising removing said dice from said carrier after said testing and packaging said dice for use.

Q13  
Cont  
66. (New) A method as in claim 1 wherein said depositing occurs before said applying. B